



MARINE DIVISION

Certificate number: 10213/C0 BV

File number: ACE 02/28/16

Product code: 2633H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Siemens AG - I IA CE

Amberg - GERMANY

for the type of product

CIRCUIT BREAKERS (LOW VOLTAGE)

SIRIUS 3RV1

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.
IEC 60947-2, IEC 60947-4-1.

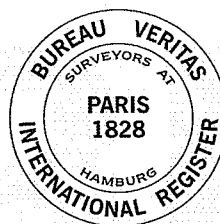
This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 04 Mar 2018

For BUREAU VERITAS,

At BV HAMBURG, on 04 Mar 2013,

Dirk Hoepfner



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

SIRIUS 3RV1 series are circuit breakers and 3RV19, 3RV29 and 8US are accessories.

1.1 - Main characteristics:

Rated voltage: 690V AC- 50/60Hz

Rated current (40°C): up to 100A

Short-circuit breaking capacity ICU (400VAC): 50 or 100kA (depending on size)

1.2 - Variants:

Type: **3RV1 a 1 1 - b b c d e - f f g g**

Basic type designation, circuit breaker, size S00 with maximum rated operational current 12A

a = Function

0 - for motor protection, 12x Ie

4 - for transformer protection, 19x Ie

bb = Current range

0A, 0B, 0C, 0D, 0E, 0F, 0G, 0H, 0J, 0K,

1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1J, 1K

c = Type of release, CLASS

A

d = Type of terminals

1, 2

e = Auxiliary switch

0, 1, 2, 3, 4, 5, 8

ff = Further mounting devices

1B, 2B, 3B

Type: **3RV1 a 2 1 - b b c d e - f f g g**

Basic type designation, circuit breaker, size S0 with maximum rated operational current 25A

a = Function

0 - for motor protection, 12x Ie

3 - for starter combination, 12x Ie

4 - for transformer protection, 19x Ie

7 - for motor protection, 13x Ie

8 - for transformer protection, 20x Ie

bb = Current range

0A, 0B, 0C, 0D, 0E, 0F, 0G, 0H, 0J, 0K,

1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1J, 1K,

4A, 4B, 4C, 4D

for 3RV1721, 3RV1821: fix current range

0A, 0B, 0C, 0D, 0E, 0F, 0G, 0H, 0J, 0K,

1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1J, 1K, 4A, 4B, 4C

c = Type of release, CLASS

A, C, D, H

d = Type of terminals

1, 3

e = Auxiliary switch

0, 1, 2, 3, 4, 5, 8

ff = Further mounting devices

0A, 1A, 2A, 3A, 4A, 5A, 6A, 1B, 2B, 3B

gg = Rated control supply voltage

A2, P0, U0, V0, R0, K1, M1, P1, B4, F4

Type: **3RV1 a 3 1 - b b c d e - f f g g**

Basic type designation, circuit breaker, size S2 with maximum rated operational current 50A

a = Function

0 - for motor protection, 12x Ie

3 - for starter combination, 12x Ie

4 - for transformer protection, 19x Ie

6 - circuit breaker (Class 5), 12x Ie

bb = Current range

4A, 4B, 4D, 4E, 4F, 4G, 4H

c = Type of release, CLASS

A, B, C, K

d = Type of terminals

1, 3

e = Auxiliary switch

0, 1, 2, 3, 4, 5, 8

ff = Further mounting devices

0A, 1A, 2A, 3A, 4A, 5A, 6A, 1B, 2B, 3B

gg = Rated control supply voltage

A2, P0, U0, V0, R0, K1, M1, R1, B4, F4

Type: **3RV1 a 4 b - c c d e f - g g h h**

Basic type designation, circuit breaker, size S3 with maximum rated operational current 100A

a = Function

0 - for motor protection

3 - for starter combination

6 - with overload and short-circuit protection, 12x Ie

7 - for motor protection, 15/13x Ie

b = Short circuit characteristics

1, 2

cc = Current range

3RV1041/1341: 4F, 4H, 4J, 4K, 4L, 4M

3RV1042/1342: 4A, 4B, 4D, 4E, 4F, 4H, 4J, 4K, 4L, 4M

3RV1742: 5A, 5B, 5C, 5D, 5E, 5F, 5G, 5H, 5J, 5L, 5Q

d = Type of release, CLASS

A, B, C, D, K

e = Type of terminals

1, 3

f = Auxiliary switch

0, 1, 2, 3, 4, 5, 8

gg = Further mounting devices

0A, 1A, 2A, 3A, 4A, 5A, 6A, 1B, 2B, 3B

hh = Rated control supply voltage

A2, P0, U0, V0, R0, K1, M1, R1, B4, F4

1.3 - Accessories:

3RV19... : e.g. Auxiliary & Signalling switches, Auxiliary releases, 3-phase bus bar equipment
3RV29... : e.g. auxiliary switches, undervoltage trip units, shunt releases, infeed system, ...
8US1251: e.g. bus bar adapter for 60mm systems

2. DOCUMENTS AND DRAWINGS:

- Catalogue: E86060-K1010-A101-A2-7600 dated 2012
- Operating Instructions: 3ZX1012-ORV03-1AA1 dated 14 June 2006; 3ZX1012-ORV04-1AA1 dated 14 June 2006
- Documents: filed in ACE 02/028/16.

3. TEST REPORTS:**SIEMENS AG:**

- 2207f, 2304j, 2305g, 2306g dated 2011-07-18
- T.R. dated February 1998; T.R. No. 98340TQ03 dated February 1998.

4. APPLICATION / LIMITATION:

4.1 - Bureau Veritas Rules for the Classification of Steel Ships and IEC 60947 specifications.
4.2 - Bureau Veritas Environmental Category, **EC Code: 31.**

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above mentioned circuit breakers are to be supplied by **SIEMENS AG - I IA CE** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320.

5.3 - **SIEMENS AG - I IA CE** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products :

SIEMENS AG - I IA CE
Werner-von-Siemens-Str. 48
92220 AMBERG
GERMANY

5.4 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

According to IEC 60947 specifications.

7. OTHERS:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time, and that **SIEMENS AG - I IA CE - GERMANY**, will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 10213/B0 BV issued on 05 Jun 2007 by the Society.

***** END OF CERTIFICATE *****